

Notice of Allowability

Application No.

09/994,468

Examiner

Lina Yang

Applicant(s)

COLMANT ET AL.

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/17/2005.
2. ☒ The allowed claim(s) is/are 1-12,14-16.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Anne Dougherty on 10/28/2005.

The application has been amended by the examiner as the following.

Claim 1:

Line 13, "***certain***" has been deleted;

Line 16, "***certain***" has been deleted;

Line 19, "***one of the copies***" has been inserted before "a specific";

Line 21, "***being the last copy***" has been deleted; and "***one of the copies is the last copy of the***" has been inserted before "specific frame".

Claim 11, line 4, "its last copy" has been changed to "***the last copy of the frame***".

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Claim 14:

Line 2, "cell " has been changed to "***unit***";

Line 4, "a cell" has been changed to "a cell of ***a variable-length unit***";

Line 11, "***one of the copies***" has been inserted before "a specific";

Line 12, "***one of the copies is the last copy of the***" has been inserted before "specific";

Line 13, "***being the last copy***" has been deleted.

Claim 16:

Line 2, "***cell***" has been changed to "***unit***";

Line 4, "cell" has been changed to "cell of ***a variable-length unit***";

Line 12, "***one of the copies***" has been inserted before "a specific";

Line 14, "***being the last copy***" has been deleted; and "***one of the copies is the last copy of the***" has been inserted before "specific frame".

Allowable Subject Matter

2. Claims 1-12 and 14-16 are allowed.

The following is an examiner's statement of reasons for allowance.

Claims 1-12 are allowable since prior art of record, does not teach or suggest a method for providing routing capability for variable-length unit traffic in a fixed-length cell routing switch with a shared memory and a plurality of registers each associated with a particular input and a particular output of said switch comprising the steps of: storing an indication that said particular output is "active" with respect to said particular input, said indication being set when a start-of-frame cell of one of the copies of a specific frame received on said particular input is transmitted on said particular output and said one of the copies being the last copy of the specific frame to be transmitted, and said indication being reset when the corresponding end-of-frame cell is transmitted at said particular output.

Claims 14-15 are allowable since prior art of record does not teach or suggest a fixed-length cell routing switch providing routing capability for variable-length unit traffic comprising: a shared memory and a plurality of registers each associated with a particular input and a particular output of said switch for storing an indication, preferably a bit, indicating that said particular output is "active" with respect to said particular input, said indication being set when a start-of-frame cell of one of the copies of a specific frame received on said particular input is transmitted on said particular output and said one of the copies being the last copy of the specific frame to be transmitted, and said indication being reset when the corresponding end-of-frame cell is transmitted at said particular output.

Claim 16 is allowable since prior art of record does not teach or suggest a fixed-length cell routing switch providing routing capability for variable-length unit traffic comprising: a shared memory and a plurality of registers each associated with a particular input and a particular output of said switch for storing an indication, preferably a bit, indicating that said particular output is "active" with respect to said particular input, said indication being set when a start-of-frame cell of one of the copies of a specific frame received on said particular input is transmitted on said particular output and said one of the copies being the last copy of the specific frame to be transmitted, and said indication being reset when the corresponding end-of-frame cell is transmitted at said particular output.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bauman et al. (U.S. Patent No. 6,160,812) discloses a method and an apparatus for supplying new requests to a scheduler in an input-buffered multi-port switch, that

limit the number of input queues and the complexity of sending requests to a scheduler, while still maintaining fair and efficient scheduling. More specifically, target output channels of requests that are presently accessible to the scheduler are identified and compared to target output channels of requests that are included in a queue of next-in-line requests. The queue of next-in-line requests is reviewed and the highest priority request having no conflicting output channels is supplied to the scheduler. The method of supplying requests to the scheduler can be scaled to include multiple channels and multiple packet priority designations.

Yamazaki (U.S. Patent No. 6,205,145) discloses a packet switch which includes input line interfaces for converting variable length packets received from input lines to fixed length cells, a switch unit for switching said packets in cell units, output line interfaces for converting output cells from the switching unit to variable length packets and transmitting the variable length packets over output lines. Each of the input line interfaces has a cell output controller for queuing the fixed length cells for each output line according to the degree of priority of the cells, and for selectively outputting the stored cells in the queues in order of priority, thereby to suppress the transmission of cells with a low priority during the times of congestion.

Wong et al. (U.S. Patent No. 6,754,216) discloses a method and apparatus for detecting congestion and controlling the transmission of cells across a data packet switch. Specifically, the system enables a cell of data to be transmitted one time over a

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high speed data bus to an Ethernet switch system where it is then distributed to each of the destinations for which it is intended (for both unicast and multicast). The system further teaches that includes a switch processor that is formed to detect congestion within the switch fabric and to transmit a congestion rating to each device coupled to transmit and receive data through the switch fabric.

Lebizay et al. (U.S. Patent No 5,602,841) discloses an efficient point-to-point and multi-points routing system and method for programmable data communication adapters in packet switching nodes of high speed networks. The principles of this efficiency is achieved since the data packets are never copied, only packet pointers are copied for each destination: Space in Buffer Memory is saved, the number of instructions is significantly reduced improving the packet throughput (number of packets per seconds that the adapter is able to transmit), and the routing is independent of the packets length.

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lina Yang whose telephone number is (571)272-3151. The examiner can normally be reached Monday through Thursday between 8:00 a.m. and 7:00 p.m. eastern standard time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 517-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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